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EXAMINER

SERGEANT, RABON A

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/868,289
Filing Date: July 10, 2001
Appellant(s): ARNOUX ET AL.

MAILED
JAN 24 2007
GROUP 1700

Paul Grandinetti
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 2, 2006 appealing from the Office action mailed November 2, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. On March 31, 2006, appellants filed a petition under 37 CFR 1.181 to request entry of the after-final amendment, refused entry by the examiner in an Advisory action, mailed January 4, 2006. On July 18, 2006, a decision on the petition was mailed denying the petition.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Within the 35 USC 103(a) rejection of claims 20-26, 28, 30-32, 37, 38, 40, 44, 46-48, and 50, (appellants' paragraph (D)), the reliance on the Rizk et al. reference (U.S. Patent 5,817,860) has been withdrawn.

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(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

JP 6-16767	Sanyo Kasei Kogyo et al.	01-1994
U.S. 5,077,371	Singh et al.	12-1991
U.S. 5,232,956	Gabbard et al.	08-1993
U.S. 5,990,258	Peter	11-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 33-41 and 43-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Appellants have failed to provide adequate support for specifying that the processes of claims 33 and 50 are conducted at ambient conditions. The only recitation of ambient pressure and temperature (ambient conditions) within the specification has been found in connection with Examples 1 and 2; therefore, support for the "ambient conditions" language is only present for compositions that correspond to Examples 1 and 2. However, appellants have not established that the claims are of the same scope as that of the examples. The examiner has considered the examples, and it appears that the examples are much more limited in scope than the compositions

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of the claims, in terms of reactant species. For example, it is noted that the examples rely on a specific amine curing agent; however the majority of claims are not so limited. Furthermore, since applicants have failed to identify the compositions or chemical make-up of ADIPRENE LF750D and BYK A530, it cannot be determined how these components of the examples correspond to the compositions of the claims. Appellants have argued that ADIPRENE LF750D has been identified as a prepolymer of toluene diisocyanate and a polyol or a polyol blend and that BYK A530 has been identified as a degassing aid. While the position is taken that these argued definitions fail to provide adequate definition with respect to the polyol species of the ADIPRENE ingredient and the structure of the BYK A530 component, the position is additionally taken that, at best, by appellants' argument, the examples are limited to the polyisocyanate being toluene diisocyanate; therefore, the argued examples provide support only for toluene diisocyanate derived compositions utilizing the aforementioned specific curing agent being processed at ambient conditions; however, appellants' claims are not so limited. Additionally, appellants' arguments with respect to the disclosed temperature conditions of 15° to 35°C do not address the pressure conditions encompassed by "ambient conditions".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 49 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 6-16767.

The reference discloses a polyurethane composition comprising the reaction of a prepolymer, derived from toluene diisocyanate and polytetramethylene glycol, with DETDA, in the presence of phthalate or phosphate plasticizers, wherein a specifically disclosed plasticizer is octyldiphenyl phosphate. See pages 1-5 and 7 of the translation.

The position is taken that octyldiphenyl phosphate at the least encompasses ethylhexyldiphenyl phosphate, and the position is further taken that ethylhexyldiphenyl phosphate meets the claim. To support this position, the examiner refers applicants to page 493 of Sax et al., wherein it is disclosed that the octyl radical encompasses the 2-ethylhexyl radical. Alternatively, if not anticipated, the position is taken that it would have been obvious to substitute one isomeric diphenyl phosphate plasticizer for another, given that one would have expected the isomeric plasticizers to function as equivalents.

Appellants' previously presented arguments concerning the temperature and pressure conditions of the process have been considered; however, claim 49 is directed to a product as opposed to a process, and appellants have not established that the argued processing conditions yield a patentably distinct product.

Appellants' response that the examiner's refusal to enter the after-final amendment is improper is not seen to address the issues of the rejection. As aforementioned within the **Status of Amendments After Final**, it is noted that appellants' petition to have the after-final amendment entered has been denied.

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Claims 33-36, 39, 41, 43, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6-16767.

The reference discloses a polyurethane composition comprising the reaction of a prepolymer, derived from toluene diisocyanate and polytetramethylene glycol, with DETDA, in the presence of phthalate or phosphate plasticizers, such as dioctyl phthalate, octyldiphenyl phosphate (considered to encompass appellants' claimed ethylhexyl diphenyl phosphate, for the reasons given above), and triphenyl phosphate. See pages 1-5 and 7 of the translation.

Appellants' instant process claims differ primarily from the reference in that the reference is concerned with the use of a RIM process that operates at conditions outside of the ambient conditions of claim 33; however, it is noted that the reference discloses that prior art processes included casting methods, considered to be comparable to the instant method. See paragraph [0002]. The position is taken that the argued elevated temperatures and pressures of the prior art correspond to conventional conditions for RIM processes. These elevated conditions are necessary in order to accelerate the reaction and cure of the polyurethane so as to realize the advantages of increased production and throughput common to RIM processes. However, one of ordinary skill in the art unconcerned with using a RIM technique would have found it obvious to produce the disclosed elastomers in accordance with the disclosed prior art process of polyurethane casting. Furthermore, since casting methods proceed more slowly than RIM methods, casting methods require conditions compatible with the attendant slower rate of mixing and reaction of the casting method. One of ordinary skill in the polyurethane art would have fully appreciated this and would have been motivated to reduce the temperature and pressure conditions from those disclosed for the RIM

technique so as to decrease the rate of reaction and cure. Accordingly, it would have been obvious to conduct the casting method at ambient conditions.

As with the previous prior art rejection, appellants' response that the examiner's refusal to enter the after-final amendment is improper is not seen to address the issues of the rejection. As aforementioned within the **Status of Amendments After Final**, it is noted that appellants' petition to have the after-final amendment entered has been denied.

Claims 20-26, 28, 30-32, 37, 38, 40, 44, 46-48, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6-16767, in view of Singh et al. ('371) and further in view of Peter ('258) and Gabbard et al. ('956).

As aforementioned, the primary reference discloses the production of polyurethanes, wherein a prepolymer, derived from toluene diisocyanate and polytetramethylene glycol, is reacted with a hindered aromatic diamine, in the presence of phthalate or phosphate plasticizers. The reference further discloses that the reaction proceeds at temperatures as low as 30°C. See pages 1-5 and 7 of the translation.

The primary reference is silent with respect to the dimethylthiotoluene diamine curing agent and specifically claimed plasticizers, such as isodecyl diphenyl phosphate, butyl benzyl phthalate, and tributoxyethyl phosphate; however, these components were known constituents of polyurethanes at the time of invention. Dimethylthiotoluene diamine was a known hindered diamine for curing toluene diisocyanate based prepolymers. See column 3, lines 61+ within Singh et al. Plasticizers corresponding to those claimed are disclosed within Gabbard et al. at column 4 (specifically, butyl benzyl phthalate is disclosed at column 4, line 33 and isodecyl diphenyl phosphate is disclosed at column 4, lines 44 and 45) and Peter at column 2, lines 47-52 (specifically, tributoxyethyl phosphate

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is disclosed at column 2, line 49). The position is taken that it would have been obvious to incorporate the curing agent and plasticizers of the secondary references within the compositions of the primary reference, because it has been held that it is *prima facie* obvious to utilize a known component for its known function. *In re Linder*, 173 USPQ 356. *In re Dial et al.*, 140 USPQ 244.

Appellants have argued that their invention provides compositions that are moldable and curable under ambient conditions by the nonobvious selection of a specific combination of ingredients, specifically the selection of a particular class of plasticizers, and that there is no indication anywhere in the prior art as to which curing agents and plasticizers, or indeed whether any particular combination of curing agent and plasticizer would result in the properties of castability and curability under ambient conditions, as well as distortion control. The examiner has carefully considered this argument; however, the rejection has been maintained for the following reasons. Firstly, with respect to the issue of “ambient conditions”, appellants’ argument is not commensurate in scope with the limitations of independent claim 20. The aforementioned reaction temperature of the primary reference is adequate to satisfy the language of claim 20 that only requires that the composition be capable of being cast and cured at temperatures between 15° and 35°C. With respect to claims 37, 38, 40, 46-48, and 50, appellants have not established that operating at ambient conditions would have been nonobvious in view of the teachings of the references and the expectations of one of ordinary skill in the art. Appellants’ instant process claims 37, 38, 40, 46-48, and 50 differ primarily from the primary reference in that the reference is concerned with the use of a RIM process that operates at conditions outside of the ambient conditions of the aforementioned claims 37, 38, 40, 46-48 and 50; however, it is noted that the reference discloses that prior art processes included casting methods, considered to be comparable to the instant method. See

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paragraph [0002]. The position is taken that the argued elevated temperatures and pressures of the prior art correspond to conventional conditions for RIM processes. These elevated conditions are necessary in order to accelerate the reaction and cure of the polyurethane so as to realize the advantages of increased production and throughput common to RIM processes. However, one of ordinary skill in the art unconcerned with using a RIM technique would have found it obvious to produce the disclosed elastomers in accordance with the disclosed prior art process of polyurethane casting. Furthermore, since casting methods proceed more slowly than RIM methods, casting methods require conditions compatible with the attendant slower rate of mixing and reaction of the casting method. One of ordinary skill in the polyurethane art would have fully appreciated this and would have been motivated to reduce the temperature and pressure conditions from those disclosed for the RIM technique so as to decrease the rate of reaction and cure. Accordingly, it would have been obvious to conduct the casting method at ambient conditions. Secondly, appellants' have argued that the selection of the curing agent and claimed plasticizers yield unexpected results in the production of the claimed polyurethanes under ambient conditions. However, appellants' examples are insufficient to support appellants' argued showing of unexpected results, because appellants' examples are not commensurate in scope with the claims and it cannot be determined if or to what extent the relied upon comparative examples are representative of the closest prior art, namely JP 6-16767. With respect to the latter issue, the closest prior art utilizes toluene diisocyanate, polyoxytetramethylene glycol, and an aromatic diamine curing agent, wherein dimethylthiotoluene diamine is not disclosed. As aforementioned, it cannot be determined what polyol or polyol blend is being used within appellants' examples and all examples utilize dimethylthiotoluene diamine. Accordingly, it is unclear exactly how appellants' comparative examples are representative of the

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closest prior art. With respect to the former issue, appellants' examples, as aforementioned, are limited to the use of toluene diisocyanate derived prepolymers, wherein the polyol component of the prepolymer has not been clearly identified, and dimethylthiotoluene diamine. Furthermore, appellants' examples utilize only two specific amounts of plasticizer, depending on species. However, appellants' claims are not limited to the exemplified prepolymer, curing agent, and specific plasticizer amounts; therefore, appellants' examples are not commensurate in scope with the claims and are insufficient to establish a probative showing of unexpected results over the scope of the claims.

Lastly, with respect to appellants' argument within page 18 of the brief that JP 6-16767 teaches away from the use of plasticizers having alkyl groups of no more than eight carbon atoms, the position is taken that while it is fair to state that that the reference teaches that alkyl groups having more than eight carbon atoms are less preferred, it cannot be fairly argued that the reference teaches away from the use of such species, since such alkyl species are clearly taught as being suitable. For example, isodecyl containing plasticizers are taught within lines 3 and 5 of paragraph [0014] of JP 6-16767.

(10) Response to Argument

Appellants' arguments have been addressed within the **Grounds of Rejection**.


(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


RABON SERGENT
PRIMARY EXAMINER

Conferees:



Supervisory Patent Examiner James Seidleck



Supervisory Patent Examiner David Wu